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10/584,876	06/29/2006	Anthony Bonnet	FR-AM2003 NP	7921
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ARKEMA INC. PATENT DEPARTMENT - 26TH FLOOR 2000 MARKET STREET PHILADELPHIA, PA 19103-3222				
EXAMINER				
PAUL, JESSICA MARIE				
ART UNIT		PAPER NUMBER		
1796				
NOTIFICATION DATE		DELIVERY MODE		
09/02/2010		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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# Office Action Summary

## Application No.

10/584,876

## Applicant(s)

BONNET ET AL.

## Examiner

Jessica Paul

## Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4, 7-13, 14-20, 24-29, 32-34, 37 and 38 is/are pending in the application.
- 4a) Of the above claim(s) 14-20, 24-29, 32-34, 37 and 38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4 and 7-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

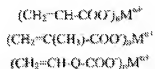
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, and 4, 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dahl et al. (WO 90/15828) in view of Rice (US Patent No. 1936994).

Regarding claims 1, 2, and 8-10: Dahl et al. teaches radiation grafting of ETFE with ethyl acrylate [p16, line3; ex4]. ETFE resin powder (fluoropolymer) and ethyl acrylate (compound containing a single C=C double bond, and at least one polar functional group (C=O)) were heated (melt blending, instant step a) in the presence of 2.5% Irganox® 1010 [p16, line5; ex4] (stabilizer, blended before irradiation; instant claims 2, 9 and 10). The resin product was filtered and dried (reads on granules or powder, instant step b), then irradiated with electrons to a total dose of 12 Mrads [p16, line9; ex4] (instant step c). The product was then washed with diisobutyl adipate (instant step d) [p16, line10-11; ex4]. Dahl et al. teaches the fluoropolymers can be used in admixtures or compositions with various additives, such as antioxidants (Irganox® 1010) and stabilizers [p13, line37-39]. Given that Dahl et al. teaches, in a preferred embodiment, adding the antioxidant (Irganox® 1010) prior to irradiation, one having ordinary skill in the art would understand that the stabilizers would also be added prior to irradiation also, since the fluoropolymers can be used in admixtures or

compositions with various additives, such as antioxidants (Irganox® 1010) and stabilizers [p13, line37-39]. Dahl et al. teaches the fluoropolymer is useful for electrical insulation (i.e. protecting electrical conductors) [p1. ine14-20].

Dahl et al. fails to teach wherein said stabilizer is at least one graftable metal salt having one of the following formulae:



Rice teaches a polymer composition that is used for the insulation of electrical conductors [p1, line1-22], wherein 2 parts by weight (10 wt. % of the stabilizer based on 20 grams of the above ETFE resin powder (91 wt. % of the EFTE resin), as calculated by examiner) of sodium undecylenate is used as a stabilizer [p2, line138; p3, line21-22] (instant claim 8) and is added prior to vulcanization (crosslinking) via thermal energy, Murphy and Rice are analogous art because both are concerned with the same field of endeavor, namely compositions useful for insulating electrical conductors. At the time of the invention, a person having ordinary skill in the art would have found it obvious to combine the sodium undecylenate stabilizer, as taught by Rice, with the method for radiation grafting, as taught by Dahl et al., and would have been motivated to do so in order to produce a composition having improved shelf life and resistance to chemical change. The examiner notes that "graftable" only requires that the metal salt be capable of grafting to the fluoropolymer, not that the metal salt is actually grafted on the fluoropolymer.

Regarding claim 4; Dahl et al. fails to teach the stabilizer blended into the fluoropolymer after the irradiation. However, the selection of any order of mixing ingredients is a prima facie case of obviousness in the absence of new or unexpected results. See *In re Burhans*, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) and *In re Gibson*, 39 F.2d 975, 5 USPQ 230 (CCPA 1930). Therefore, it would have been obvious to one having ordinary skill in the art, at the time of the invention, to add the stabilizer prior to or after irradiation, and still achieve the same expected outcome of results.

Regarding claim 7; the limitations of claim 7, merely define aspects of the third formula of instant claim 1  $((CH_2=CH-Q-COO^-)_nM^{n+})$  and wherein M is zinc, therefore making the limitations of claim 7 optional, wherein claim 1 is rejected by which M is sodium (see above).

Regarding claim 11; Dahl et al. teaches the antioxidant (Irganox® 1010) is used in an amount of 2.5 wt. %, however Dahl et al. fails to teach the antioxidant content is 0.001 to 2% of the fluoropolymer. The experimental modification of this prior art in order to ascertain optimum operating conditions fails to render applicants' claims patentable in the absence of unexpected results. See *In re Aller*, 105 USPQ 233. At the time of the invention a person having ordinary skill in the art would have found it obvious to optimize the amount of antioxidant used in the composition based on the specific fluoropolymer employed and the desired degree of stability.

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dahl et al. (WO 90/15828), in view of Rice (US Patent No. 1936994), as applied to claim 1 above, and further in view of Gotcher et al. (US Patent No. 4353961).

Dahl et al. discloses the basic claimed method for radiation grafting, as set forth above, with respect to claim 1.

Regarding claims 12 and 13; Dahl et al. fails to teach the fluoropolymer is PVDF, which contains at least 85% VDF by weight. Gotcher et al. teaches melt-processible fluorocarbon polymer compositions, wherein suitable fluoropolymers include ethylene-tetrafluoroethylene (ETFE) and vinylidene fluoride (VDF) homopolymers (PVDF, 100% VDF monomers; instant claim 13) [col2, line63-68]. Therefore, Gotcher et al. teaches that ETFE and PVDF are functional equivalents for the purpose of producing melt-processible fluoropolymers for wire coatings. It is *prima facie* obvious to substitute art-recognized functional equivalents known for the same purpose (See MPEP § 2144.06).

### ***Response to Arguments***

Applicant's arguments filed 6/17/2010 have been fully considered but they are not persuasive.

Applicants' argue that after the grafted fluoropolymer of Dahl reference has been formed it can be used in admixtures or compositions with various additives, including antioxidants and stabilizers [p13, line28], thus there is no teaching or suggestion in the Dahl reference of Applicants' specific graftable metal salt as a stabilizer that is grafted onto the fluoropolymer. The examiner respectfully disagrees. In a preferred

embodiment, Dahl et al. teaches the radiation grafting of ETFE with ethyl acrylate, wherein ETFE resin powder is mixed with ethyl acrylate and a phenolic inhibitor (antioxidant), which is added prior to irradiation/grafting of the ETFE resin [p16, ex4].

Dahl et al. teaches that additives including antioxidants and stabilizers may be added to the fluoropolymer; and then list a preferred embodiment where the antioxidant is added before irradiation, one having ordinary skill in the art would understand that stabilizers would also be added prior to irradiation.

Regarding applicants' arguments in view of Rice; the applicants' are reminded that the claim only requires the metal salt be *graftable*, indicating that the metal salt must only be capable of grafting to the fluoropolymer, not that the metal salt is actually grafted on the fluoropolymer. The applicants' are also reminded that Rice is only relied upon for the teaching of the specific metal salt stabilizer as required by instant claim 1, not the means by which the fluoropolymer is irradiated (i.e. photon or electron irradiation).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica Paul whose telephone number is (571)270-5453. The examiner can normally be reached on Monday thru Friday 8:00- 6:00p; alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/  
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